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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Guy Andrew VAZ ) RE: Preliminary Amendment  
Serial No.: Not yet assigned ) ) Group: unknown  
Filed: concurrently herewith ) ) Examiner: unknown  
For: "PROTECTIVE BOOT AND SOLE ) ) Our Ref: B-3834DIV of DIV  
STRUCTURE" ) ) 619083-7  
                                  ) ) Date: September 26, 2001

Commissioner of Patents and Trademarks  
BOX NEW PATENT APPLICATION  
Washington, D.C. 20231

Sir:

The above-identified application is a divisional of pending prior U.S. Patent Application Serial No. 09/633,955 filed on August 8, 2000, which is a divisional of U.S. Patent Application Serial No. 09/470,552 filed on December 22, 1999. Prior to examining this divisional application, it is respectfully requested that the following amendments be made:

**IN THE CLAIMS**

Please cancel Claims 1-71 without prejudice.

Please amend Claim 72 as indicated. Please add Claims 73 - 94 to the above-identified application. A clean copy of Claims 72 - 94 is presented on the following pages 2 - 4 of this preliminary amendment. A marked copy of amended Claim 72 is presented in the Appendix to this preliminary amendment.

**IN THE ABSTRACT**

Please delete "Figure 1" from line 14 of the abstract.

72. (Amended) A metal matrix composite material, wherein the composite is formed from woven or chopped graphite and wherein the material is formed using a method comprising the steps of:

    impregnating the graphite with a polymer containing a metal powder;

    drying the graphite;

    passing the graphite through a molten bath of metal alloy that is at a temperature to carburise the polymer and so form the composite material; and

    exerting pressure on the composite material to remove excess metal alloy therefrom.

73. (New) The material of Claim 72 wherein the composite is formed from woven or chopped graphite and a ceramic material.

74. (New) The material of Claim 72 wherein the woven graphite is of the type 3K TOW, 380g/m<sup>2</sup>, M60/T300.

75. (New) The material of Claim 72 wherein the polymer comprises either a polymer solution or molten polymer.

76. (New) The material of Claim 72 wherein the metal powder is formed from a metal alloy.

77. (New) The material of Claim 76 wherein the metal alloy constitutes at least 20% w/w of the polymer.

78. (New) The material of Claim 77 wherein the metal powder is formed from an alloy including aluminum, nickel and molybdenum.

79. (New) The material of Claim 72 wherein the step of drying the graphite comprises passing the graphite through an electric furnace.

80. (New) The material of Claim 72 wherein the molten metal alloy is formed from an alloy of aluminum, nickel and molybdenum.

81. (New) The material of Claim 72 wherein the step of exerting pressure on the composite material comprises passing the composite through a set of rollers that are capable of exerting about 35 to 40 tons of compression and which squeeze out substantially all excess metal alloy from the composite material.

82. (New) The material of Claim 72 wherein a metal is applied to the composite material to provide excellent bonding of the material.

83. (New) The method of claim 82 wherein the metal is titanium, beryllium or a metal alloy.

84. (New) The method of claim 83 wherein the metal is applied by plasma spraying or hot sheet pressing.

85. (New) A rolled metal matrix composite material, wherein the composite is formed from woven or chopped graphite and wherein the material is formed using a method comprising the steps of:

impregnating the graphite with a molten polymer containing a high temperature alloy powder;

drying the impregnated graphite; and

rolling the impregnated graphite in a set of rollers to form the rolled composite material.

86. (New) The material of claim 85 wherein the composite is formed from woven or chopped graphite and a ceramic material.

87. (New) The material of Claim 85 wherein the woven graphite is of the type 3K TOW, 380g/m<sup>2</sup>, M60/T300.

88. (New) The material of Claim 85 wherein the high temperature alloy is a titanium or nickel alloy.

89. (New) The material of Claim 88 wherein the metal alloy constitutes up to about 50% w/w of the polymer.

90. (New) The material of Claim 85 wherein the step of drying the graphite comprises passing the graphite through an electric furnace.

91. (New) The material of Claim 85 wherein the step of exerting pressure on the impregnated graphite comprises passing the graphite, through a set of rollers that are capable of exerting about 35 to 40 tons of compression.

92. (New) The material of Claim 85 wherein a metal is applied to the composite material to provide excellent bonding of the material.

93. (New) The material of Claim 92 wherein the metal is titanium, beryllium or a metal alloy.

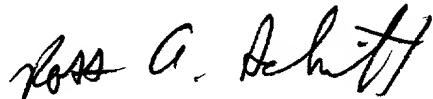
94. (New) The material of Claim 93 wherein the metal is applied by plasma spraying or hot sheet pressing.

**REMARKS**

This amendment cancels Claims 1 - 71 of the application. This amendment also amends Claim 72 to incorporate subject matter previously recited in Claim 52, now cancelled. Therefore, support for this amendment may be found in the application at now cancelled Claim 52. Claims 73 - 94 have been added to the application. Claims 73 - 81 incorporate subject matter previously recited in Claims 53 - 71, now cancelled. Claims 82 - 84 incorporate subject matter previously recited in Claims 70 - 72, now cancelled. Claims 85 - 94 incorporate subject matter previously recited in Claims 62 - 71, now cancelled. Therefore, the Applicant submits that these claim amendments add no new matter to the application and may be properly entered. The Applicant may also elect to add additional claims to the application to provide coverage similar to, broader than or narrower than the present claims, as amended, at any time during the pendency of the above-identified U.S. patent application.

Amendment of the subject application is respectfully requested.

Respectfully submitted,



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Enclosures: Appendix (1 page)

APPENDIX

MARKED VERSION TO SHOW CHANGES MADE

72. (Amended) A metal matrix composite material, wherein the composite is formed from woven or chopped graphite and wherein the material is formed using [the] a method [of claim 52] comprising the steps of:

impregnating the graphite with a polymer containing a metal powder;

drying the graphite;

passing the graphite through a molten bath of metal alloy that is at a temperature to carburise the polymer and so form the composite material; and

exerting pressure on the composite material to remove excess metal alloy therefrom.